

VP000 Boiler Blowdown Valve



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VP000 Boiler Blowdown Valve

1. Product Introduction

The rapid blowdown valve at the bottom of the boiler is a pressure-bearing special valve installed on the boiler, steam drum, mud drum, and lower header of the water-cooled wall. It is used to discharge contaminated boiler water under high-temperature and high-pressure conditions.

After the feedwater is heated and evaporated into steam, dissolved salts, suspended mud and sediment in the water continuously accumulate in the boiler water. The blowdown valve discharges a portion of the wastewater to control the total dissolved solids (TDS) content of the boiler water, remove the deposited sludge, prevent boiler scaling, corrosion, steam-water foaming, and steam-water co-boiling problems, avoid overheating and cracking of the heating surface, and ensure qualified steam quality and safe operation of the boiler.

The VP000 boiler blowdown valve has the following features:

- Quick opening and closing, instantaneous strong flushing of the discharge, reducing the erosion of the sealing surface.

Opening/closing time < 2 seconds, manual closing < 1 second.

- Hard-sealed material is resistant to erosion and has a long service life, suitable for high-temperature saturated water conditions.
- The packing has a long service life.
- The valve seat can be replaced by an upper-pressing type, making on-site maintenance of the valve convenient and fast.
- The flow path is simple and less likely to be clogged with impurities.
- Standard with manual operation, optional with pneumatic, and can be automatically opened for discharging in accordance with the controller to reduce heat energy loss caused by excessive discharging.

2. Technical Specifications

Size: DN15(NPS1/2)~DN50 (NPS2)

Pressure: PN16~PN100、Class150~Class600

Connection: flange, thread, BW,SW

Air Pressure: 0.4~0.6Mpa

Working Temperature: 100~320℃

Working medium: Saturated boiler water

Flow characteristic: Quick opening

Leakage level: V grade

Actuator model: MT1R + KS

Rated Cv

DN	DN15	DN20	DN25	DN32	DN40	DN50
Rated Cv	12	12	12	22	22	22
Travelmm	10	10	10	10	10	10

3. Structure

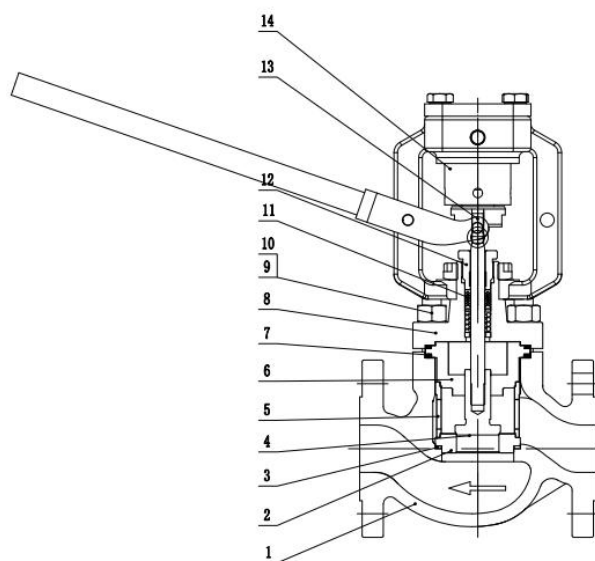
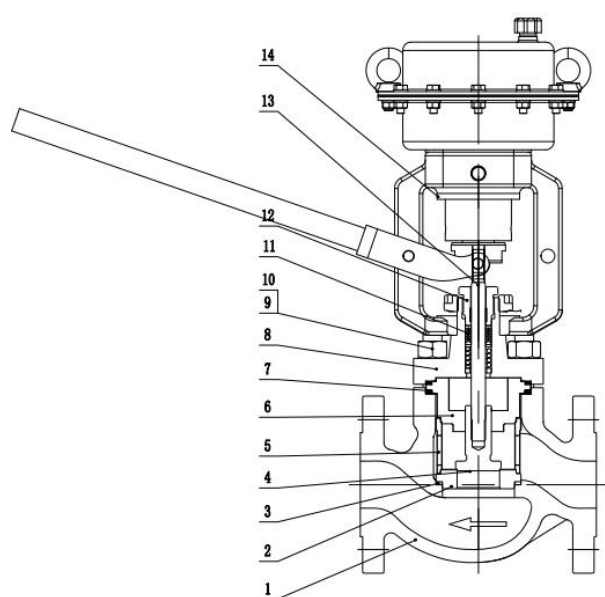


Figure 1 Pneumatic Blowdown Valve Figure 2 Manual Blowdown Valve

NO.	Name
1	Body
2	Seat
3	Wrapping pad
4	Core
5	Pressure cage
6	Guide cage
7	Sealing gasket
8	Cover
9	Bolt
10	Nut
11	Packing
12	Packing sleeve
13	Stem
14	Actuator

4. The material of parts

Body	Bonnet	Core	Seat	Stem	Bolt/Nut
WCB CF8	WCB CF8	304+STL	304+STL	410/304	A193 B7/A194 2H A193 B8/A194 8

(1)The operating temperature range of the body material corresponding to the pressure range (MPa)

Temp°C	Class150					Class300				
	A105 (WCB)	LF2 (LCB)	F11 (WC6)	F304 (CF8)	F316L (CF3M)	A105 (WCB)	LF2 (LCB)	F11 (WC6)	F304 (CF8)	F316L (CF3M)
-196 ~ -47	-	-	-	1.90	1.90	-	-	-	4.96	4.96
-46 ~ -30	-	1.96	-	1.90	1.90	-	5.17	-	4.96	4.96
-29 ~ 38	1.96	1.96	1.98	1.90	1.90	5.11	5.17	5.17	4.96	4.96
50	1.92	1.92	1.95	1.83	1.84	5.01	5.17	5.17	4.78	4.81
100	1.77	1.77	1.77	1.57	1.62	4.66	5.15	5.15	4.09	4.22
150	1.58	1.58	1.58	1.42	1.48	4.51	4.97	4.97	3.7	3.85
200	1.38	1.38	1.38	1.32	1.37	4.38	4.80	4.80	3.45	3.57
250	1.21	1.21	1.21	1.21	1.21	4.19	4.63	4.63	3.25	3.34
300	1.02	1.02	1.02	1.02	1.02	3.98	4.29	4.29	3.09	3.16
350	0.84	0.84	0.84	0.84	0.84	3.76	4.03	4.03	2.96	3.03
375	0.74	-	0.74	0.74	0.74	3.64	-	3.89	2.9	2.99
400	0.65	-	0.65	0.65	0.65	3.47	-	3.65	2.84	2.94

Temp°C	Class600					PN16				
	A105 (WCB)	LF2 (LCB)	F11 (WC6)	F304 (CF8)	F316L (CF3M)	A105 (WCB)	LF2 (LCB)	F11 (WC6)	F304 (CF8)	F316L (CF3M)
-196 ~ -47	-	-	-	9.93	9.93	-	-	-	1.57	1.57
-46 ~ -30	-	10.21	-	9.93	9.93	-	1.61	-	1.57	1.57
-29 ~ 38	10.21	10.21	10.34	9.93	9.93	1.61	1.61	1.63	1.57	1.57
50	10.02	10.02	10.34	9.56	9.62	1.58	1.58	1.63	1.51	1.52
100	9.32	9.32	10.3	8.17	8.44	1.46	1.46	1.63	1.29	1.33
150	9.02	9.02	9.95	7.4	7.7	1.43	1.43	1.57	1.17	1.22
200	8.76	8.76	9.59	6.9	7.13	1.38	1.38	1.51	1.09	1.13
250	8.39	8.39	9.27	6.5	6.68	1.32	1.32	1.46	1.03	1.05
300	7.96	7.96	8.57	6.18	6.32	1.22	1.22	1.35	0.97	1.00
350	7.51	7.51	8.04	5.93	6.07	1.17	1.17	1.27	0.93	0.96
375	7.27	-	7.76	5.81	5.98	1.15	-	1.23	0.92	0.94
400	6.94	-	7.33	5.69	5.89	1.09	-	1.15	0.90	0.93

Temp°C	PN25					PN40				
	A105 (WCB)	LF2 (LCB)	F11 (WC6)	F304 (CF8)	F316L (CF3M)	A105 (WCB)	LF2 (LCB)	F11 (WC6)	F304 (CF8)	F316L (CF3M)
-196 ~ -47	-	-	-	2.45	2.45	-	-	-	3.92	3.92
-46 ~ -30	-	2.55	-	2.45	2.45	-	4.03	-	3.92	3.92
-29 ~ 38	2.52	2.55	2.55	2.45	2.45	4.03	4.03	4.08	3.92	3.92
50	2.47	2.55	2.55	2.36	2.37	3.95	3.95	4.08	3.78	3.8
100	2.29	2.54	2.54	2.02	2.08	3.66	3.66	4.06	3.23	3.33
150	2.23	2.45	2.45	1.83	1.9	3.57	3.57	3.93	2.93	3.04
200	2.16	2.37	2.37	1.70	1.76	3.46	3.46	3.79	2.72	2.82
250	2.06	2.28	2.28	1.60	1.65	3.29	3.29	3.64	2.56	2.63
300	1.91	2.11	2.11	1.51	1.56	3.06	3.06	3.38	2.42	2.50
350	1.82	1.98	1.98	1.46	1.5	2.92	2.92	3.18	2.33	2.40
375	1.80	-	1.91	1.44	1.47	2.88	-	3.06	2.30	2.36
400	1.70	-	1.80	1.41	1.45	2.72	-	2.89	2.26	2.32

Temp°C	PN63					PN100				
	A105 (WCB)	LF2 (LCB)	F11 (WC6)	F304 (CF8)	F316L (CF3M)	A105 (WCB)	LF2 (LCB)	F11 (WC6)	F304 (CF8)	F316L (CF3M)
-196 ~ -47	-	-	-	6.17	6.17	-	-	-	9.8	9.8
-46 ~ -30	-	6.35	-	6.17	6.17	-	10.08	-	9.8	9.8
-29 ~ 38	6.35	6.35	6.43	6.17	6.17	10.08	10.08	10.21	9.8	9.8
50	6.22	6.22	6.43	5.95	5.98	9.88	9.88	10.21	9.44	9.5
100	5.77	5.77	6.4	5.08	5.25	9.15	9.15	10.16	8.07	8.33
150	5.62	5.62	6.19	4.62	4.79	8.92	8.92	9.82	7.34	7.6
200	5.45	5.45	5.96	4.29	4.43	8.65	8.65	9.47	6.81	7.04
250	5.19	5.19	5.74	4.04	4.15	8.23	8.23	9.11	6.41	6.59
300	4.81	4.81	5.33	3.81	3.93	7.64	7.64	8.46	6.05	6.24
350	4.59	4.59	5.00	3.67	3.79	7.29	7.29	7.94	5.83	6.01
375	4.53	-	4.82	3.63	3.72	7.2	-	7.66	5.76	5.90
400	4.29	-	4.55	3.56	3.66	6.81	-	7.22	5.64	5.81

5. Dimension

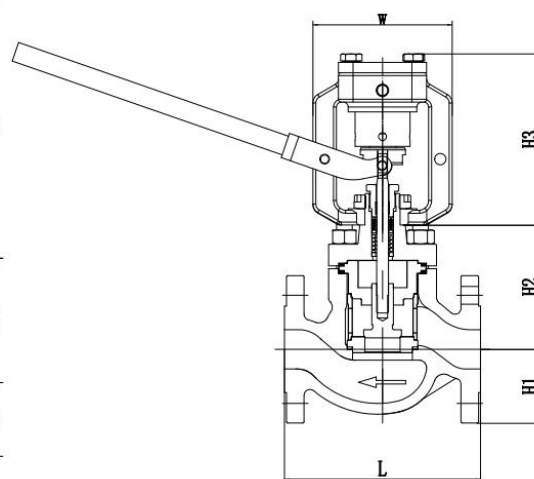
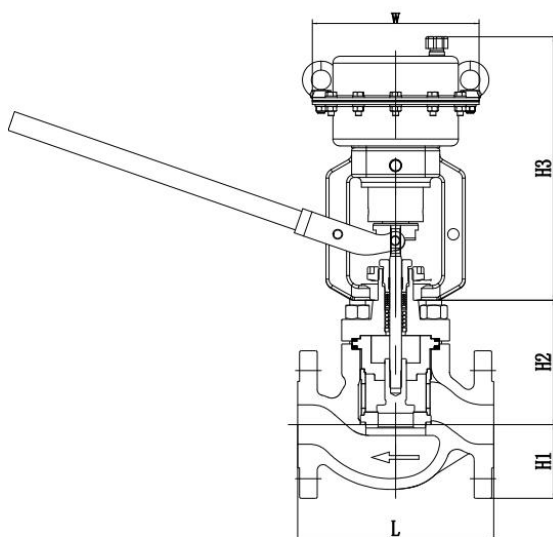


Figure 3 Pneumatic Blowdown Valve Figure 4 Manual Blowdown Valve

DN	Actuator	L							H1	H2	H3	H3	W
		PN16	PN25	PN40	PN63/ PN100	Class150	Class300	Class600			Pneumatic	Manual	
DN15	MT1R+KS	130	130	130	-	130	130	-	75	140	280	180	180
DN20	MT1R+KS	150	150	150	-	184	194	-	75	140	280	180	180
DN25	MT1R+KS	160	160	160	-	184	197	-	75	140	280	180	180
DN32	MT1R+KS	180	180	180	-	180	222	-	90	130	280	180	180
DN40	MT1R+KS	200	200	200	-	222	235	-	90	130	280	180	180
DN50	MT1R+KS	230	230	230	-	254	267	-	105	130	280	180	180
DN20	MT2R+KS	-	-	-	206	-	-	206	75	140	380	280	270
DN25	MT2R+KS	-	-	-	210	-	-	210	75	140	380	280	270

DN32	MT2R+KS	-	-	-	251	-	-	251	90	160	380	280	270
DN40	MT2R+KS	-	-	-	251	-	-	251	90	160	380	280	270
DN50	MT2R+KS	-	-	-	286	-	-	286	105	160	380	280	270